

Studies on Sensory Deprivation: V. Part 1. Introductory Remarks and General Methods

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STUDIES ON SENSORY DEPRIVATION: V.*

PART 1. INTRODUCTORY REMARKS AND GENERAL METHODS

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The experiments reported in the following papers were designed to examine further the hypothesis proposed in our earlier studies that the higher order functions of organism will be deteriorated by sensory deprivation and the lower order functions facilitated.

The experiments of 24 hrs. sensory deprivation were performed under the procedure to prevent the patterning of sensory stimulation, using 12 male undergraduate students as Ss.

The purpose of the experiments, which had been repeatedly stated in our previous papers (1, 2, 3, 4), was to explain the differentiating effects of sensory deprivation in terms of the relationship among various functions of organism. The results of our preceding experiments led the hypothesis that sensory deprivation will deteriorate the higher order functions of organism and will facilitate the lower order functions. The present experiments were designed to examine further the validity of the hypothesis. Besides the general improvement of the experimental procedures, a few tests were performed during, not after, the last 2 hrs. of the sensory deprivation by interphone system. We tried to refine the technique rather than add the new testings. The results will be interpreted in the context of the hypothesis in the following papers.

METHOD

Procedure: General procedures of sensory deprivation in the present experiments consisted in preventing the patterning of sensory stimulation as in the earlier studies. Ss wore translucent goggles for control of visual patterns and lay down on a bed made on a reclining sheet in the sound-proof room, Ss' postures or body movements were, then, restricted to those which were made on the bed, but no additional severe restrictions

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were imposed. Auditory stimulation was held at a constant level by noise generated from an airconditioner. Communication between *S* and *E* was made through interphone system. During the sensory deprivation period, no special meals were given to *Ss*, but *Ss* could help themselves to crackers and fruit juice at any time.

In the present experiments, sensory deprivation was lasted for 24 hrs. The experimental confinement began at 1.00 p.m., and finished at the same hour on the day after. The beginning time of sensory deprivation was decided so as not to be conformable with the time of natural sleep in an ordinary life, so that one could find any information about a sleep in the early period of the confinement. But some tests (memory test, verbal learning, and TAT) were introduced 22 hrs. after the beginning of sensory deprivation at intervals of 30–40 minutes, by making *S* conscious of the duration of his confinement.

The tests used were, in the order of administration, (1) memory test, (2) verbal learning, (3) TAT, (4) measurement of visual cognition threshold, (5) weight lifting experiment, (6) test of size constancy, and (7) interview and medical examination. These tests were given twice in principle, before and after the sensory deprivation period. It took about 2 hrs. to finish all the tests from cessation of the sensory deprivation. Besides these tests, *Ss*' all activities were observed through TV-camera or other instruments, and polygraphic records were taken during the sensory deprivation period.

The first series of the experiments were carried out from the end of June to the beginning of July, and the second series from the end of July to the beginning of August 1965. The control experiments were administered in October of the same year.

Subjects: 12 male undergraduate students were used as *Ss*, who were collected publicly in one university (Tohoku Gakuin Univ.) and paid for their participations in the experiments. Their ages ranged from 18 to 21 and the mean age was 18.4. None of them refused to stay in the experimental room, but 4 of 12 *Ss* passed the sensory deprivation period under more or less different conditions, because of an abdominal pain or diarrhoea from which they suffered or of an accidental failure of electric power supply or of their activities violating the experimental conditions, and some data of them were discarded.

The subjects of the control group were 11 male undergraduate students of the same university as those of the experimental group.

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ZUSAMMENFASSUNG

Die Versuchsbedingungen von 24 Stunden der sinnlichen Entziehung werden berichtet. Die Voraussetzung unserer Versuchen ist es, daß die sinnliche Entziehung auf die höher Funktionen hemmend und auf die niederen Funktionen förderlich wirkt.

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